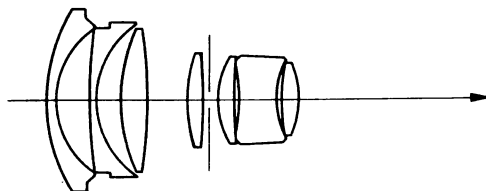


MINOLTA AF 24-50mm F4 (2558-100)
MINOLTA MAXXUM AF 24-50mm F4 (2558-600)

Lens



Construction	: 7 elements in 7 groups
Type	: 2-component mechanical-compensation zoom lens
Coating	: Minolta Achromatic
Angle of view	: 84°-47°
Lens mount	: Minolta A mount
Lens signal contact	: 5 contacts
Diaphragm	: Automatic preset diaphragm
f No.	: Maximum.....4 Minimum.....22 Full-stop setting.....5 stops
Diaphragm blade	: 7 blades

FOCUSING

Focusing	: AF, FA, M
Type	: Front focusing
Minimum focusing distance	: 0.35m

Distance scale	: $\frac{1.2 \quad 1.5 \quad 2 \quad 3 \quad 8}{0.35 \quad 0.4 \quad 0.5 \quad 0.7 \quad 1 \quad 8} \begin{matrix} \text{ft} \\ \text{m} \end{matrix}$
Infrared correction scale	: Yes $\left(\begin{matrix} & & & \\ 50 & (35) & (28) & 24 \end{matrix} \right)$

ZOOMING

Type	: Mechanical-compensation zoom lens, Rotary 2-ring
Zooming scale	: 50 35 28 24
Zooming ratio	: 2X

DIMENSIONS & WEIGHT

Dimensions	: $\phi 69$ (max. diameter) \times 60mm (max. length)
Weight	: 295g
Filter-thread diameter	: $\phi 55$ mm (P=0.75)
Lens hood diameter	: $\phi 55$ mm (clip-on)

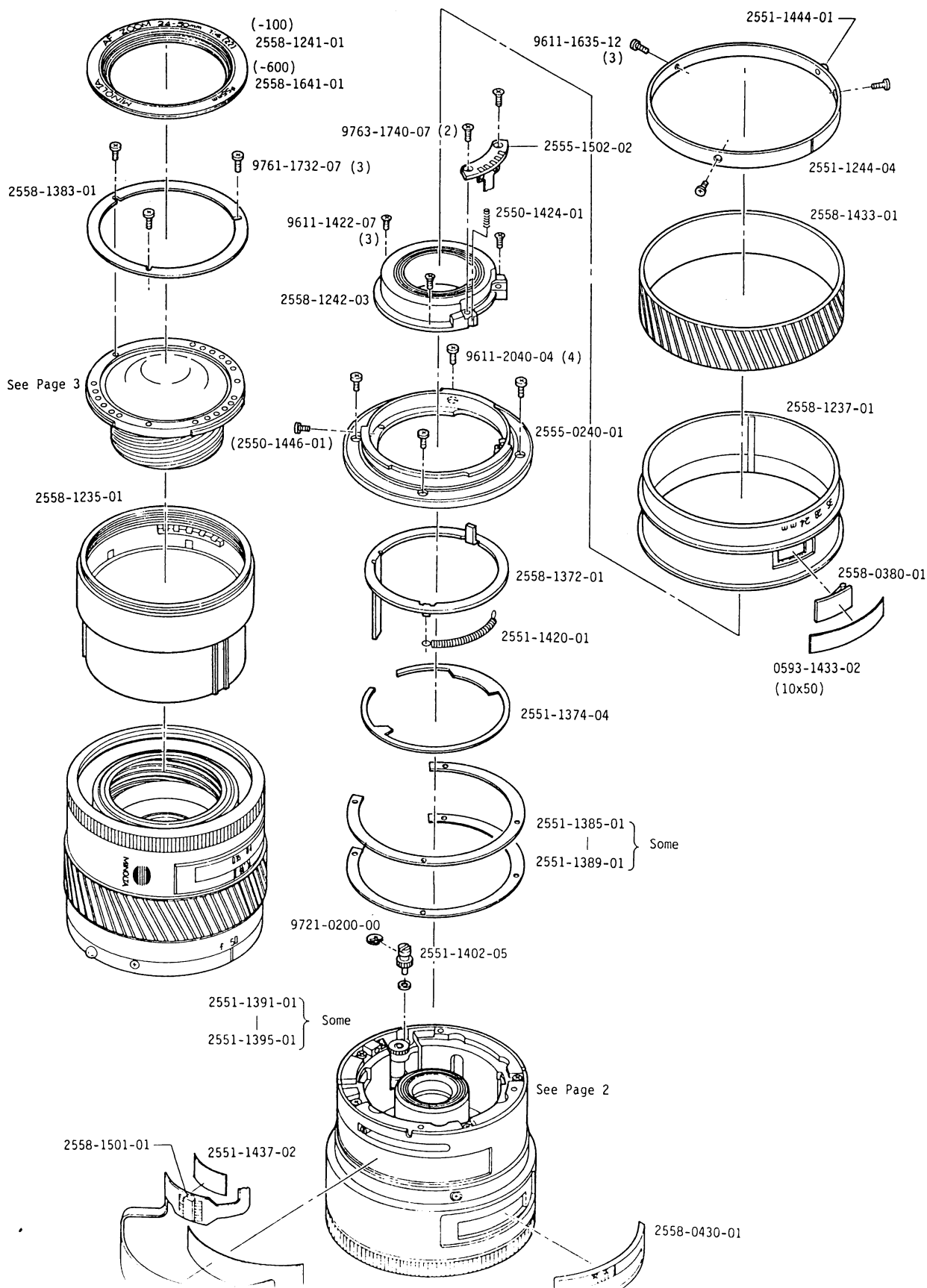
ACCESSORIES

Lens case	: LH-1032
Lens hood	: 6558-810

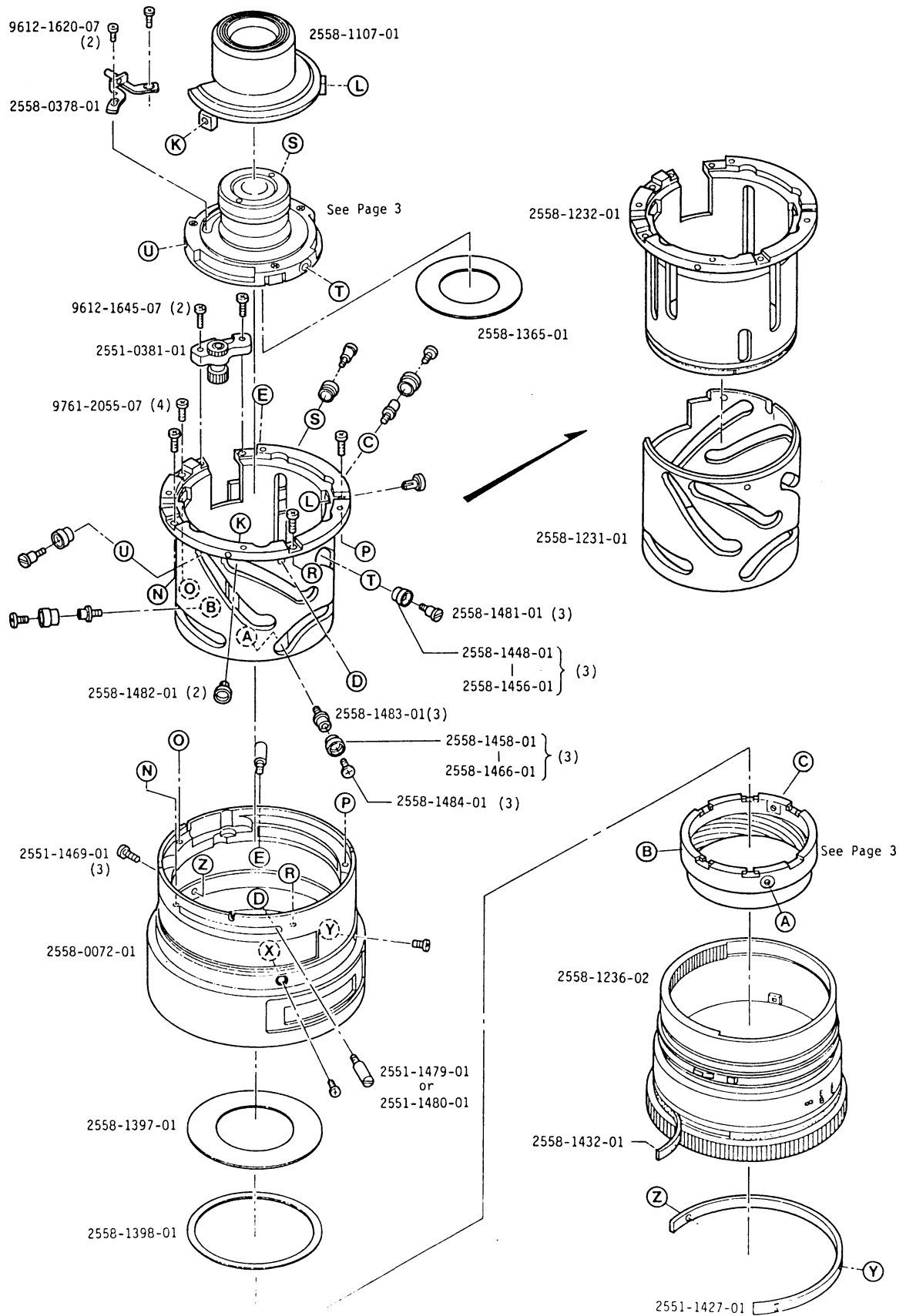
I N D E X

PART NO.	PAGE	PART NO.	PAGE	PART NO.	PAGE
2558-0040	----- 3	2551-1393	----- 1	2558-1463	----- 2
2558-0072	----- 2	2551-1394	----- 1	2558-1464	----- 2
2558-0233	----- 3	2551-1395	----- 1	2558-1465	----- 2
2555-0240	----- 1	2558-1397	----- 2	2558-1466	----- 2
2558-0378	----- 2	2558-1398	----- 2	2551-1469	----- 2
2558-0380	----- 1	2551-1402	----- 1	2551-1479	----- 2
2551-0381	----- 2	2551-1420	----- 1	2551-1480	----- 2
2558-0430	----- 1	2550-1424	----- 1	2558-1481	----- 2
		2551-1427	----- 2	2558-1482	----- 2
2558-1105	----- 3	2558-1432	----- 2	2558-1483	----- 2
2558-1107	----- 2	2558-1433	----- 1	2558-1484	----- 2
2558-1231	----- 2	0593-1433	----- 1	2558-1501	----- 1
2558-1232	----- 2	2551-1436	----- 1	2555-1502	----- 1
2558-1235	----- 1	2551-1437	----- 1	2558-1503	----- 1
2558-1236	----- 2	2551-1444	----- 1	2558-1641	----- 1
2558-1237	----- 1	2550-1446	----- 1	2558-1807	----- 3
2558-1241	----- 1	2558-1448	----- 2		
2558-1242	----- 1	2558-1449	----- 2	9611-1422-07-----	1
2551-1244	----- 1	2558-1450	----- 2	9611-1635-12-----	1
2558-1365	----- 2	2558-1451	----- 2	9611-2040-04-----	1
2558-1372	----- 1	2558-1452	----- 2		
2551-1374	----- 1	2558-1453	----- 2	9612-1620-07-----	2
2558-1383	----- 1	2558-1454	----- 2	9612-1645-07-----	2
2551-1385	----- 1	2558-1455	----- 2		
2551-1386	----- 1	2558-1456	----- 2	9721-0200-00-----	1
2551-1387	----- 1	2558-1458	----- 2		
2551-1388	----- 1	2558-1459	----- 2	9761-1732-07-----	1
2551-1389	----- 1	2558-1460	----- 2	9761-2055-07-----	2
2551-1391	----- 1	2558-1461	----- 2		
2551-1392	----- 1	2558-1462	----- 2	9763-1740-07-----	1

AF ZOOM 24-50mm F4(22) Code No.2558-100
 MAXXUM AF ZOOM 24-50mm F4(22) Code No.2558-600



PART NO.	PART NAME		QTY.
2555-0240-01	BAYONET MOUNT SET	バヨネットマウントセット	1
(2550-1446-01)	SCREW	ストッパービス	1
2558-0380-01	BRUSH SET	ブラシセット	1
2558-0430-01	DISTANCE SCALE WINDOW SET	距離表示窓セット	1
2558-1235-01	LENS BARREL	鏡頭環	1
2558-1237-01	ZOOM RING	ズームリング	1
2558-1241-01	NAME RING (-100)	飾り環	1
2558-1242-03	LIGHT SHIELD RING	遮光筒	1
2551-1244-04	ZOOM RING SET RING	ズームリング抜け止めリング	1
2558-1372-01	PRESET RING	プリセットリング	1
2551-1374-04	PRESET RING PRESSURE	プリセットリング押え	1
2558-1383-01	FOCUSING RING SET PLATE	距離環締付板	1
2551-1385-01	BACK WASHER-A (T=0.05)	バックワッシャー	} SOME
2551-1386-01	BACK WASHER-B (T=0.07)	バックワッシャー	
2551-1387-01	BACK WASHER-C (T=0.1)	バックワッシャー	
2551-1388-01	BACK WASHER-D (T=0.2)	バックワッシャー	
2551-1389-01	BACK WASHER-E (T=0.5)	バックワッシャー	
2551-1391-01	COUPLER ADJUSTING WASHER-A (T=0.05)	調整ワッシャー	} SOME
2551-1392-01	COUPLER ADJUSTING WASHER-B (T=0.07)	調整ワッシャー	
2551-1393-01	COUPLER ADJUSTING WASHER-C (T=0.1)	調整ワッシャー	
2551-1394-01	COUPLER ADJUSTING WASHER-D (T=0.2)	調整ワッシャー	
2551-1395-01	COUPLER ADJUSTING WASHER-E (T=0.5)	調整ワッシャー	
2551-1402-05	COUPLER	カブラー	1
2551-1420-01	MAIN SPRING	メインスプリング	1
2550-1424-01	SPRING	アーススプリング	1
2558-1433-01	LEATHER	ゴムリング	1
0593-1433-02	TAPE A (FOR ROLL/30M)	補強テープ	1
2551-1436-02	TAPE-A	テープ	1
2551-1437-02	TAPE-B	テープ	1
2551-1444-01	BAYONET POINT	バヨネット標点	1
2558-1501-01	IC (TOSHIBA, ML00L)	IC	1
2555-1502-02	LENS CONTACT BOARD	信号基板	1
2558-1503-01	FLEXIBLE PCB	フレキ	1
2558-1641-01	NAME RING (-600)	飾り環	1
9611-1422-07	PHILLIPS TYPE SCREW	十字穴付なべ小ねじ	3
9611-1635-12	PHILLIPS TYPE SCREW	十字穴付なべ小ねじ	3
9611-2040-04	PHILLIPS TYPE SCREW	十字穴付なべ小ねじ	4
9721-0200-00	E-RING	Eリング	1
9721-0200-00			7



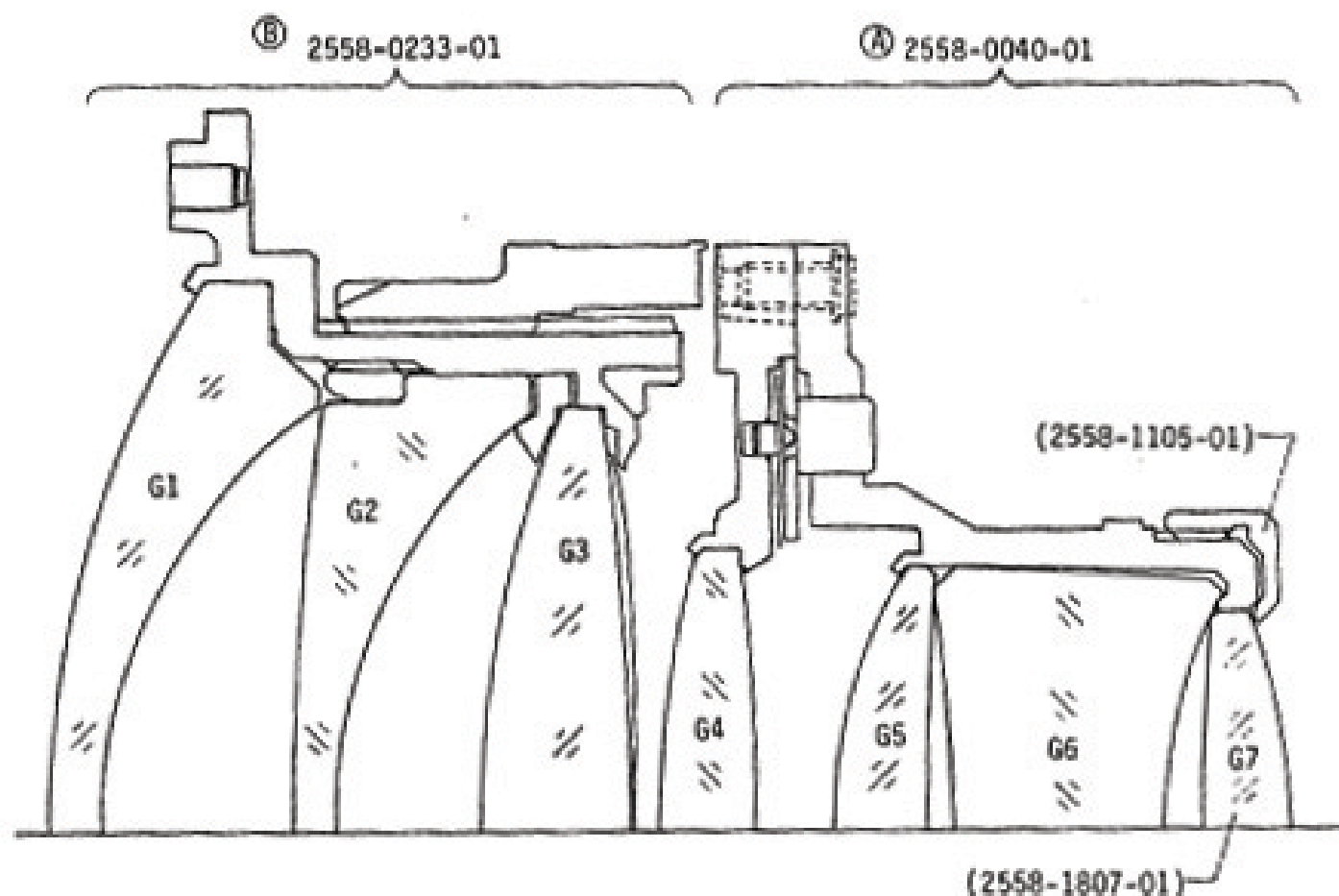
PART NO.	PART NAME		QTY.
2558-0072-01	OUTER RING SET	固定保持環セット	1
2558-0378-01	CONNECTING PLATE SET	絞り連動板セット	1
2551-0381-01	GEAR SET	ギヤー台板セット	1
2558-1107-01	LIGHT SHIELD PLATE	移動遮光筒	1
2558-1231-01	ZOOM CAM BARREL	ズームカム環	1
2558-1232-01	FIXED BARREL	固定筒	1
2558-1236-02	FOCUSING RING	距離リング	1
2558-1365-01	COVER	カバープレート	1
2558-1397-01	LIGHT SHIELD PLATE	遮光板	1
2558-1398-01	TAPE	テープ	1
2551-1427-01	FOCUS GUIDE	フォーカスガイド	1
2558-1432-01	FRICTION PLATE	摩擦布	1
2558-1448-01	GUIDE ROLLER (D1=5.03,D2=4.53)	案内ローラー	3
2558-1449-01	GUIDE ROLLER (D1=5.03,D2=4.52)	案内ローラー	
2558-1450-01	GUIDE ROLLER (D1=5.03,D2=4.51)	案内ローラー	
2558-1451-01	GUIDE ROLLER (D1=5.02,D2=4.53)	案内ローラー	
2558-1452-01	GUIDE ROLLER (D1=5.02,D2=4.52)	案内ローラー	
2558-1453-01	GUIDE ROLLER (D1=5.02,D2=4.51)	案内ローラー	
2558-1454-01	GUIDE ROLLER (D1=5.01,D2=4.53)	案内ローラー	
2558-1455-01	GUIDE ROLLER (D1=5.01,D2=4.52)	案内ローラー	
2558-1456-01	GUIDE ROLLER (D1=5.01,D2=4.51)	案内ローラー	3
2558-1458-01	1ST. GUIDE ROLLER (D1=5.03,D2=4.53)	第1群案内ローラー	
2558-1459-01	1ST. GUIDE ROLLER (D1=5.03,D2=4.52)	第1群案内ローラー	
2558-1460-01	1ST. GUIDE ROLLER (D1=5.03,D2=4.51)	第1群案内ローラー	
2558-1461-01	1ST. GUIDE ROLLER (D1=5.02,D2=4.53)	第1群案内ローラー	
2558-1462-01	1ST. GUIDE ROLLER (D1=5.02,D2=4.52)	第1群案内ローラー	
2558-1463-01	1ST. GUIDE ROLLER (D1=5.02,D2=4.51)	第1群案内ローラー	
2558-1464-01	1ST. GUIDE ROLLER (D1=5.01,D2=4.53)	第1群案内ローラー	
2558-1465-01	1ST. GUIDE ROLLER (D1=5.01,D2=4.52)	第1群案内ローラー	3
2558-1466-01	1ST. GUIDE ROLLER (D1=5.01,D2=4.51)	第1群案内ローラー	
2551-1469-01	SCREW	セットビス	3
2551-1479-01	ZOOM OPERATION PIN-A (D=2.53)	ズーム操作ピンA	2
2551-1480-01	ZOOM OPERATION PIN-B (D=2.55)	ズーム操作ピンB	
2558-1481-01	GUIDE PIN	案内ピン	3
2558-1482-01	STOPPER PIN	規制ピン	2
2558-1483-01	1ST. GUIDE PIN	第1群案内ピン	3
2558-1484-01	SCREW	案内ローラー押え	3
9612-1620-07	PHILLIPS TYPE SCREW	十字穴付なべ小ねじ	2
9612-1645-07	PHILLIPS TYPE SCREW	十字穴付なべ小ねじ	2

■ When repairing following parts, must be checked resolving power by projection.

■ 下記部品を修理した場合は、必ず投影解像力を確認して下さい。

㊦: The influential lens group in the lens performance. (Influence: In alphabetical order)

㊦: レンズ性能によく影響するレンズ群。(影響度: アルファベット順)



PART NO.	PART NAME		QTY.
2558-0040-01	REAR LENS GROUP SET	後玉群セット	1
(2558-1105-01)	G7 PRESSURE RING	G7押入	1
(2558-1807-01)	LENS-G7	レンズG7	1
2558-0233-01	FRONT LENS GROUP SET	前玉群セット	1

REPAIR GUIDE

- The contents of this manual are in accordance with the assembling procedure.
Therefore, follow the reverse procedure when disassembling.

—Description of marks used—

- **B** : Adhesive
- **S** : Solvent
- **A** : Anti-diffusion compound
- **G** : Lubricant
- **T** : Tool
- : Point of assembling and general caution

■ Assembling and adjusting procedure

	Page
1 Fixed barrel, Zoom cam barrel, Rear lens group set, Light shield plate, 1st moving barrel assembling	1
2 Outer ring set, Focusing ring assembling	2
3 Flexible PC board, Bayonet set, Light shield ring, Zoom ring assembling	3
■ Brush position adjusting	3
4 Lens barrel, Front lens group set, Name ring assembling	4
■ Focus shift/flange back adjusting	4
■ Projection resolving power checking	4
■ Aperture diameter checking/adjusting	4
■ General function checking	4
■ Front lens group set assembling	4
■ Aperture diameter checking	5
■ Aperture diameter adjusting	6
■ Back washer and coupler adjusting-washer replacing	7
■ Flexible PC board replacing	8
■ Description of focusing and zooming	9
■ Wiring schematic diagram and printed wiring diagram	10

■ Precautions

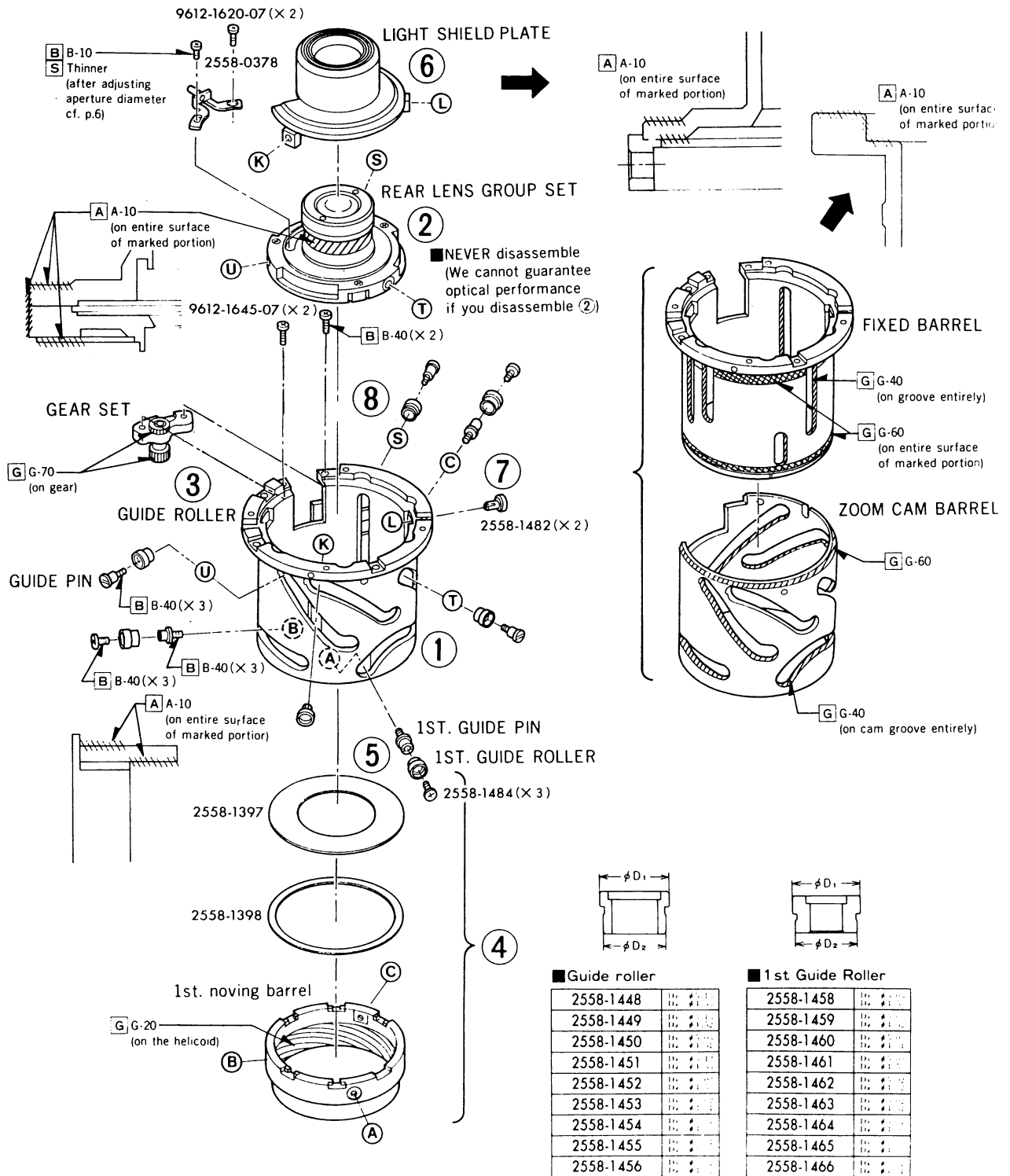
- Since this lens uses many resin parts, keep the following in mind when assembling and adjusting.
Use Fronsolve or alcohol when cleaning. Never use thinner, ketone or ether.
- Since MOS-IC is used in this lens, it is necessary to take special precautions about static electricity.
When performing repairs, use the conductive mat without fail, as shown.



**1 Fixed barrel, Zoom cam barrel, Rear lens group set.
Light shield plate, 1st moving barrel**

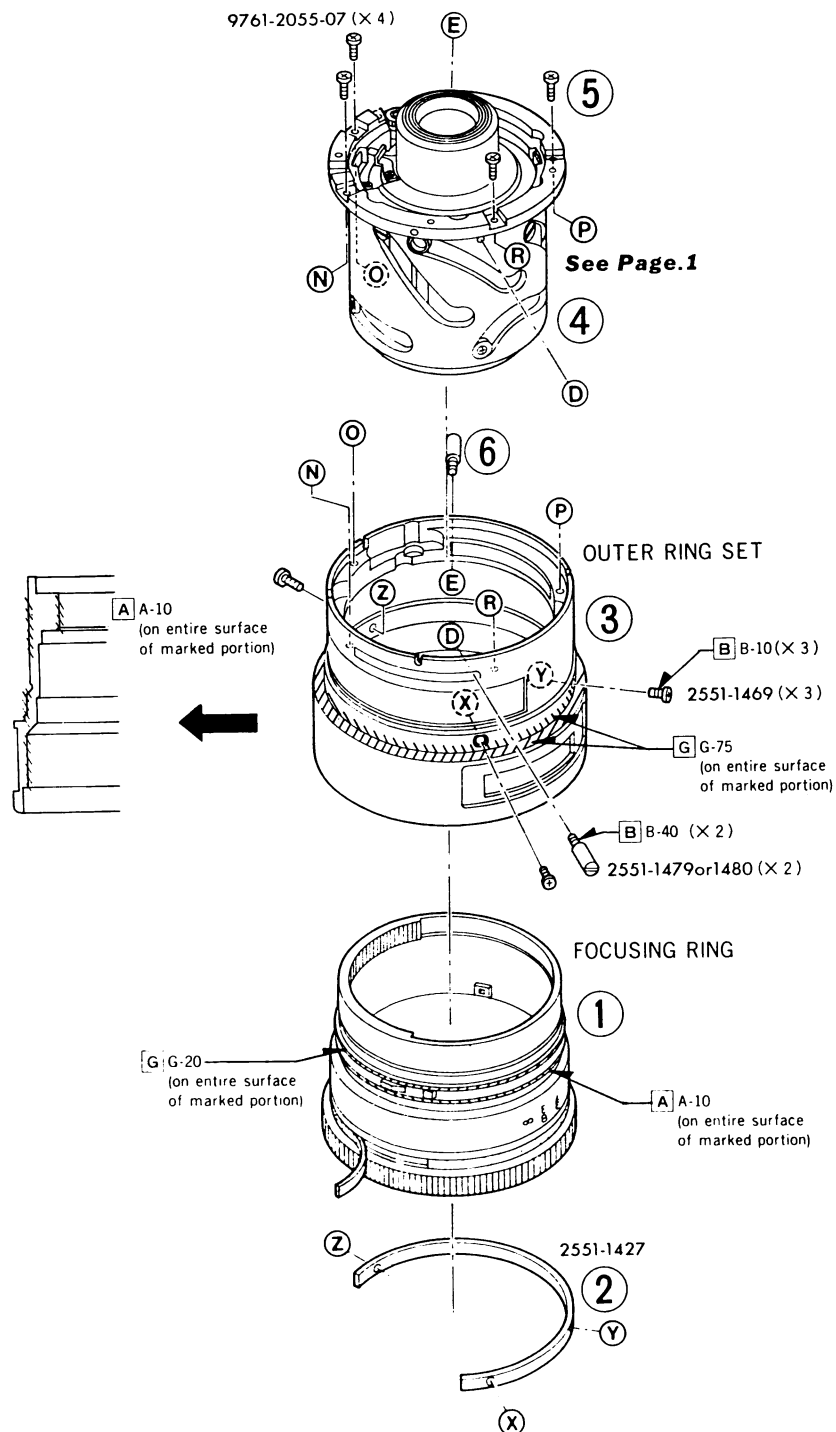
■ Assemble the parts in order of ① — ⑧

■ After assembling, check functioning.



2 Outer ring set, Focusing ring

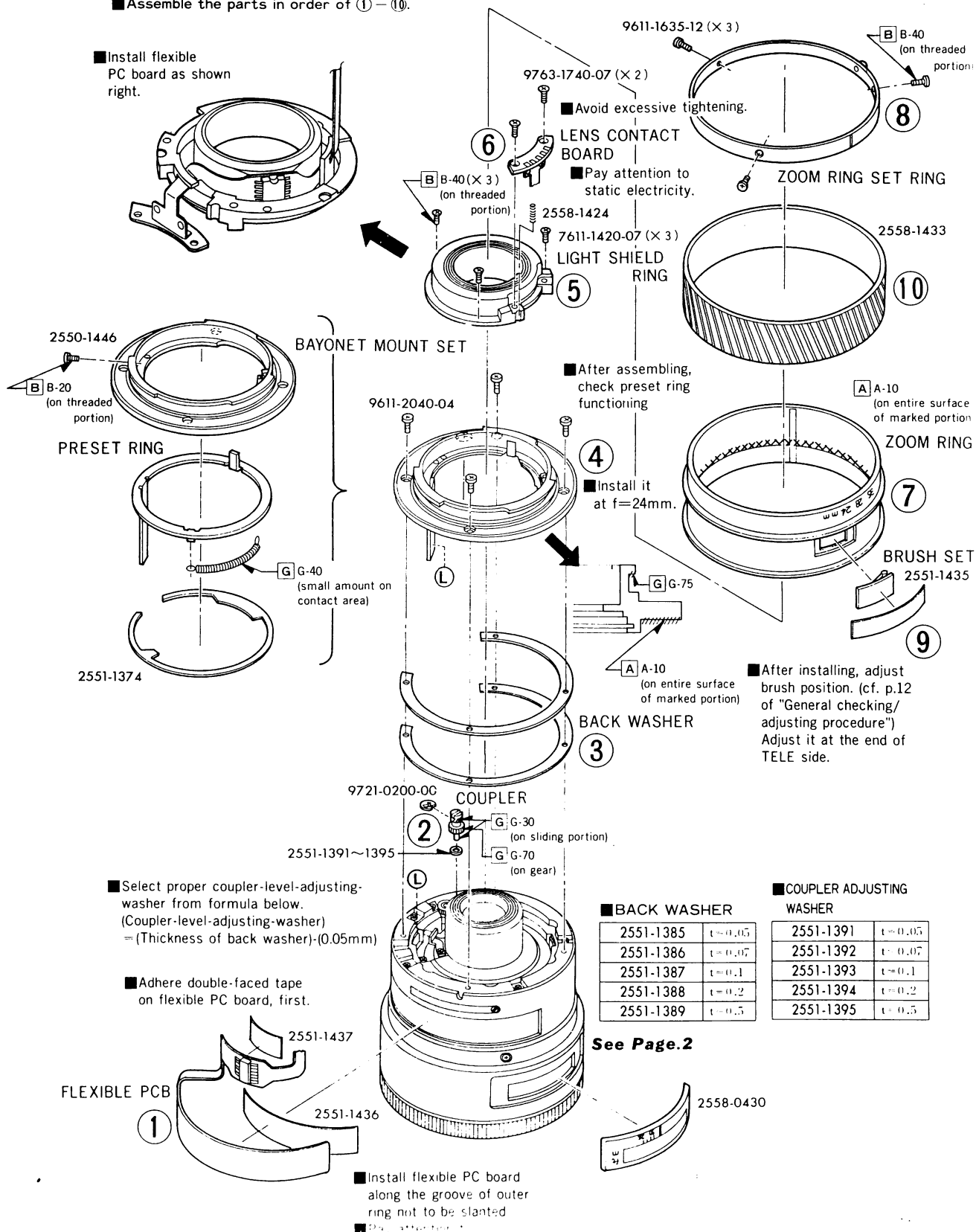
■ Assemble the parts in order of ①—⑥.



**3 Flexible PC board, Bayonet mount set.
Light shield ring, Zoom ring**

■ Assemble the parts in order of ① - ⑩.

■ Install flexible PC board as shown right.



■ BACK WASHER

2551-1385	$t \approx 0.05$
2551-1386	$t \approx 0.07$
2551-1387	$t \approx 0.1$
2551-1388	$t \approx 0.2$
2551-1389	$t \approx 0.5$

■ COUPLER ADJUSTING WASHER

2551-1391	$t \approx 0.05$
2551-1392	$t \approx 0.07$
2551-1393	$t \approx 0.1$
2551-1394	$t \approx 0.2$
2551-1395	$t \approx 0.5$

4 Lens barrel, Front lens group set. Name ring

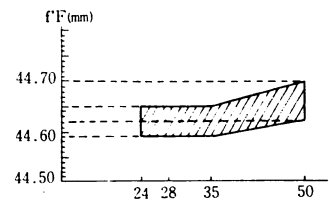
■ Assemble the parts in order of ① - ④.

■ After assembling, perform the following checking/adjusting.

(1) Adjust focus shift/flange back.

(cf. p.3 of "General checking/adjusting procedure")

f(mm)	f'F(mm)
24	44.59 ± 0.66 ₀
28.8	44.59 ± 0.66 ₀
35	44.59 ± 0.66 ₀
50	44.12 ± 0.08 ₀



(2) Check projection resolving power.

(cf. p.6 of "General checking/adjusting procedure")

Allowable range for servicing

f(mm)	Distance D(m)	Center (y'=0)	y'=15	
			S	M
24	0.8~1.06	100	32	25
35	1.2~1.5	100	32	25
50	1.7~2.05	100	32	25

S : Sagittal image
M : Meridional image

(3) Check/adjust the aperture diameter

(cf. Aperture diameter checking, p.5).

Aperture diameter adjusting, p.6).

(4) Check the general functioning. (cf. p.14 of General checking/adjusting procedure.)

■ Front lens group set assembling procedure.

(1) Set zoom ring at f=50mm, and focusing ring at D=∞.

(2) Install front lens group set. Avoid touching it and lens barrel each other.

(3) Set the projected portion of lens barrel on the flange of front lens group as follows:

[1] Turn lens barrel in direction of A.

[2] At the position in the figure below, pull up the lens barrel.

[3] Then turn the barrel in B direction.

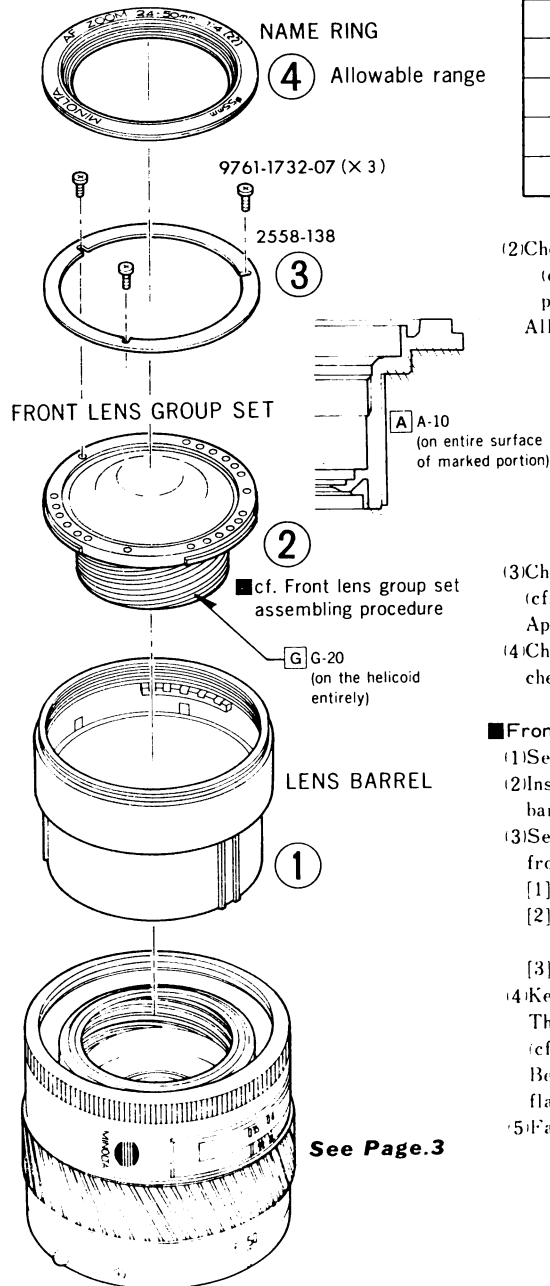
(4) Keep turning front lens barrel until it stops.

Then turn it back by about 5mm. Adjust focus shift.

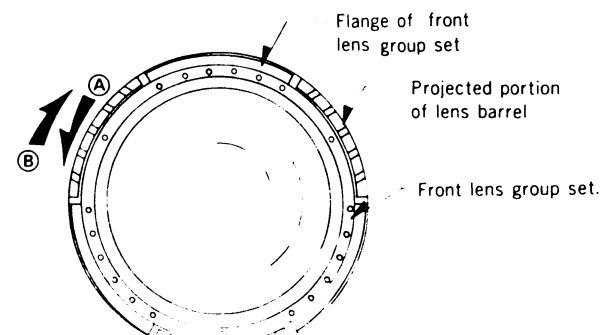
(cf. p.3 of General checking/adjusting procedure.)

Be sure that the projected portion of lens barrel is on the flange of front lens group set.

(5) Fasten 2558-1383 exactly with 9761-1732-07 X3.



See Page.3



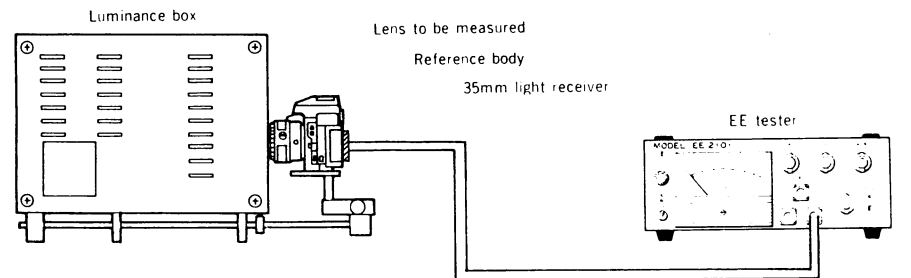
Aperture diameter checking

■ Since aperture diameter checking procedure of this model differs from one of regular A-lens, General checking/adjusting procedure is not usable. Therefore, check aperture diameter following procedure below.

■ **Measuring instruments** : Luminance box (Model L-2101, L-222⁺, L-223⁺ ※Discontinued model)
: EE tester (Model EE-2101, EE-2111)
: 35mm light receiver
: Reference body (Select following General checking procedure on p.9.)

■ Preparation

1. Set measuring instruments as below.



● **Luminance box**
K value : 1.3
Luminance : EV 11

● **Lens to be measured**
Distance scale ring : ∞ infinity
Zoom operation ring : 50mm

● **Reference body**
Mode : M
Shutter speed setting : bulb
Aperture : f/11
Focus mode : M

● **EE tester**
FUNCTION : 35
ASA : F
K value : 1.3
MEAS-CALF : CALF
F : 11

■ Checking procedures

1. Release the shutter several times and take the average of reading values.
2. Make sure that aperture diameter error, which is calculated as below, is within the allowable range.

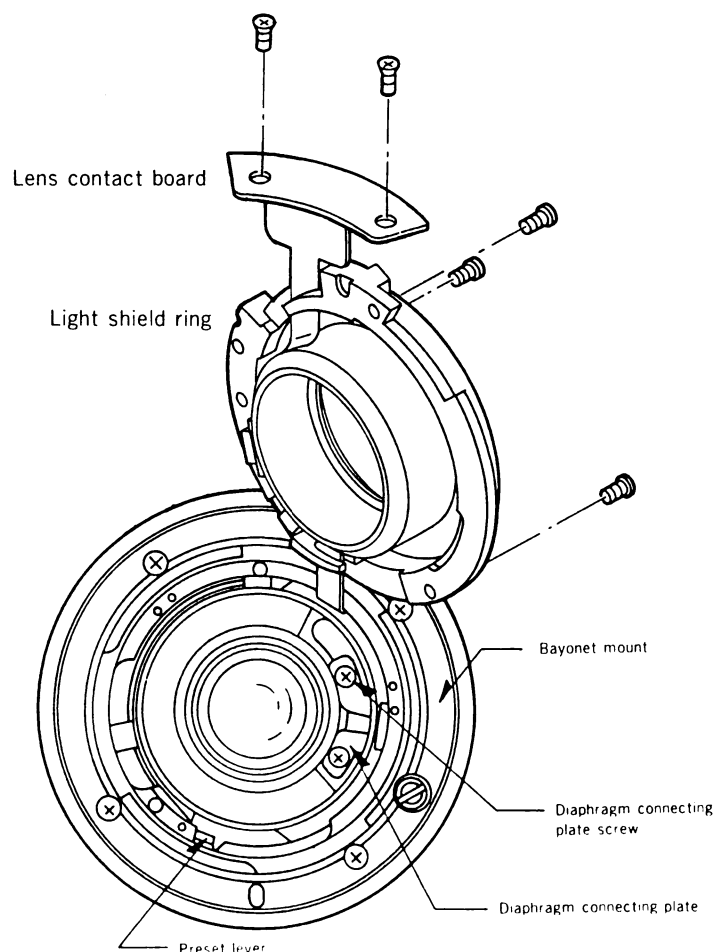
Aperture diameter error	Average of reading values	Reference value
Refer to General checking/adjusting procedure p.9.		
		Allowable range
		0 ± 0.1 EV

■ Aperture diameter adjusting

Since aperture diameter adjusting procedure of this model differs from one of regular A-lens, General checking/adjusting procedure is not usable. Therefore, adjust aperture diameter following procedure below.

1. Set focal length at $f=50\text{mm}$.
2. Remove 2 screws of lens contact board and 3 screws of light shield ring. Then remove lens contact board and light shield ring. (cf. Fig.1)
3. Loosen diaphragm-connecting-plate screws ($\times 2$), keep preset lever at full open position where preset lever touches bayonet mount. Or install aperture full-opening tool instead of light shield ring.
4. Adjust inscribed circle diameter of aperture at 18.5mm, moving diaphragm connecting plate.
(Aperture blades do not remain.)
5. Tighten diaphragm-connecting-plate-screws temporarily, set light shield ring and lens contact board temporarily.
Check aperture diameter. (cf. Aperture diameter checking, p.5)
6. Make sure that aperture diameter is in allowable range, tighten diaphragm-connecting-plate-screw*.
Apply bond on head of the screws.
Set light shield ring and lens contact board. *Avoid excessive tightening.

■ Fig. 1

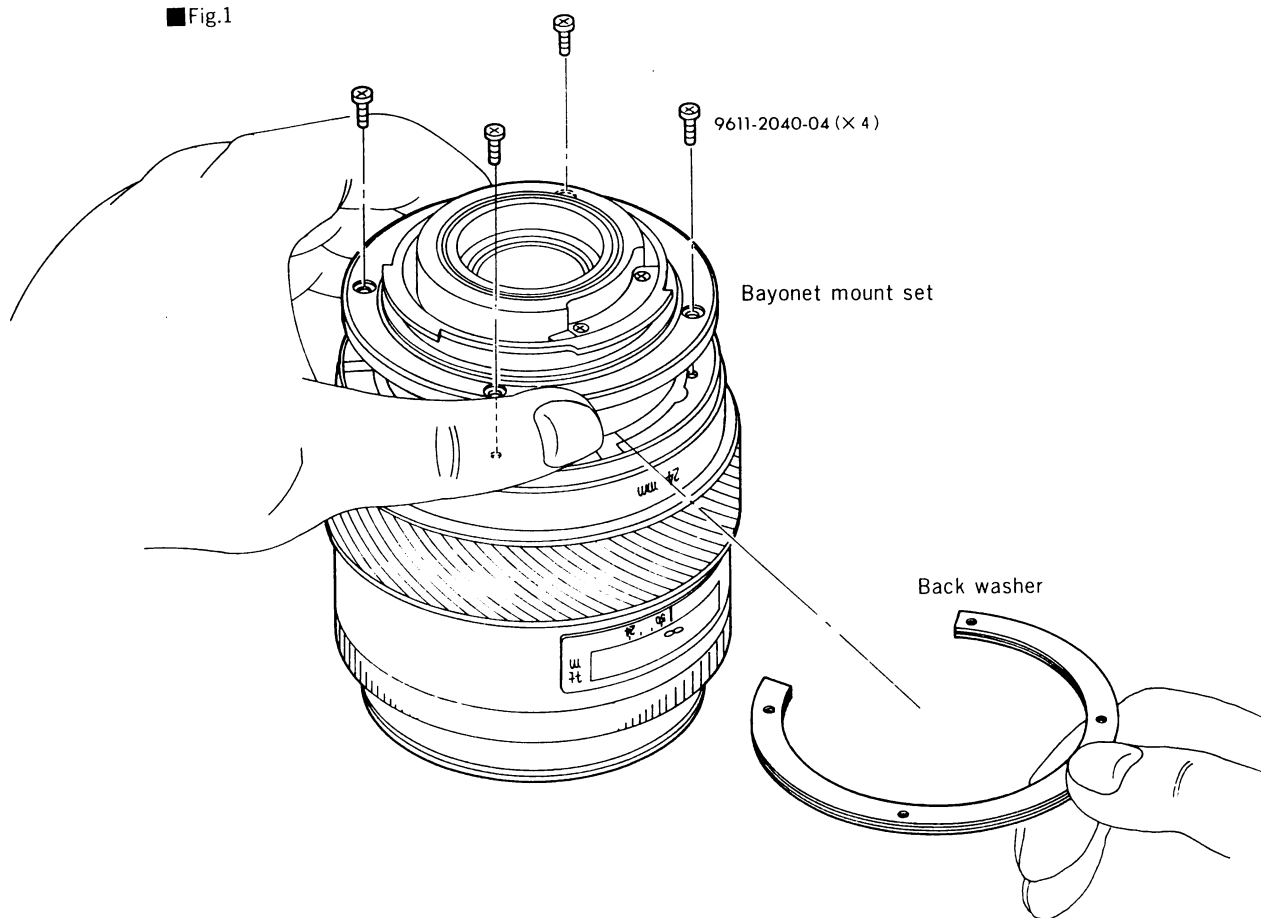


Back washer and Coupler-adjusting-washer replacing

When flange back adjusting is needed after flange back measuring, adjust level of back washer and coupler as below.

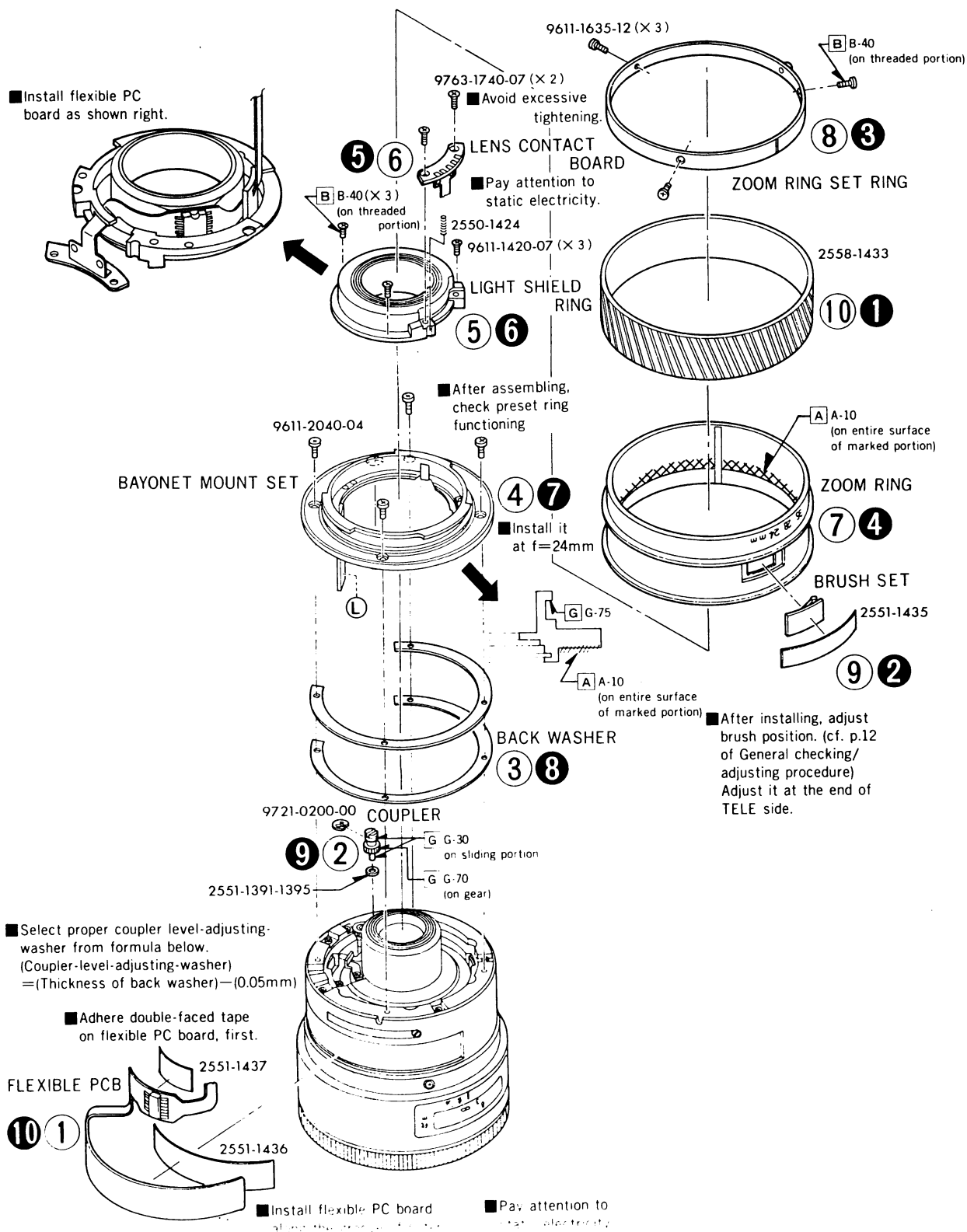
1. Set focal length at $f=24\text{mm}$.
2. Remove bayonet mount screws (9611-2040-04).
3. Raise bayonet mount slightly, pull back-washer out.
4. Prepare back washer which thickness is calculated by flange back adjusting. (p.3 of General checking/adjusting procedure)
5. Replace coupler adjusting-washer.
(Coupler adjusting-washer) = (Thickness of back washer) - (0.05mm)
6. Install back washer referring Fig.1. (Install it on flexible PC board without fail.)
7. Tighten bayonet mount screws, measure flange back and make sure it is within the allowable range.

■ Fig.1



Flexible PC board replacing

- Disassemble the parts in order of ① - ⑩. (Set focal length at $f=24\text{mm}$)
- Assemble the parts in order of ① - ⑩.
- After assembling, check the general functioning. (cf. p.14 of General checking/adjusting procedure)



Description of focusing and zooming

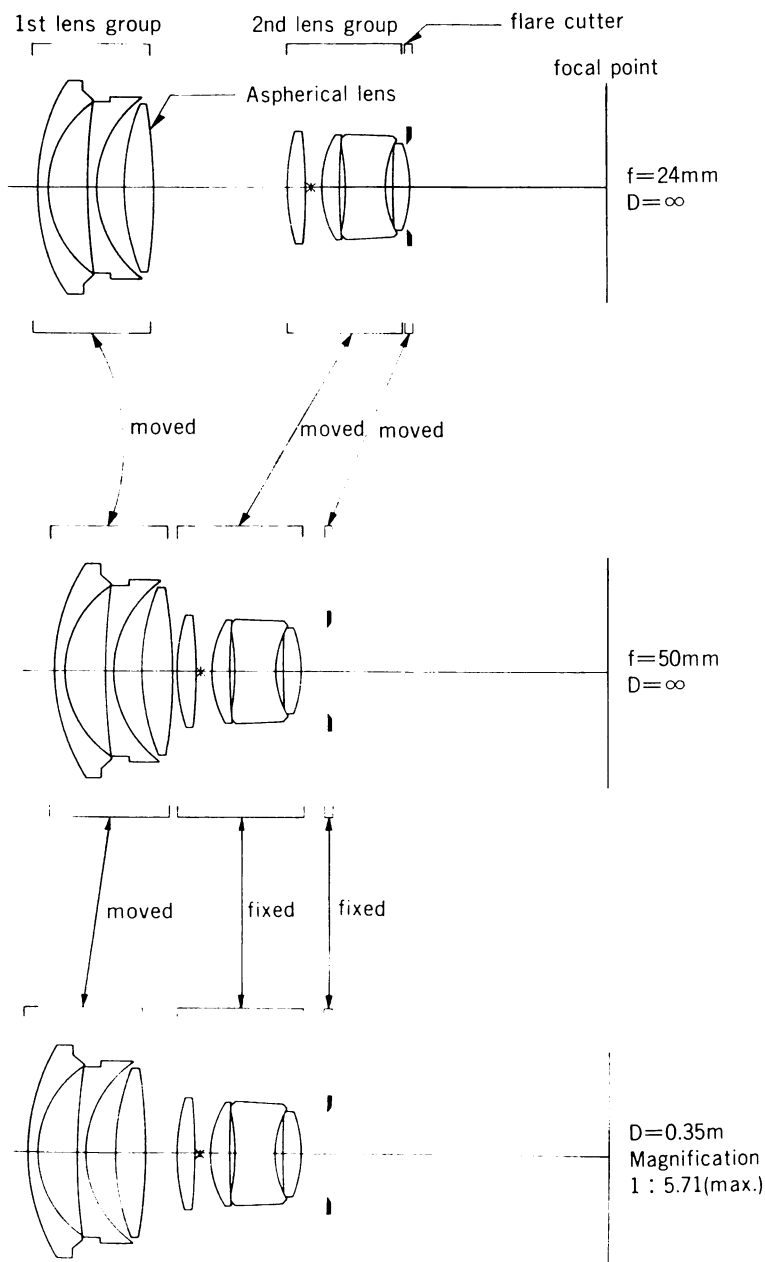
System : 2-component mechanical-compensation zoom lens (negative component for 1st lens group, positive for 2nd)

When zooming, 1st and 2nd lens groups are moved individually by rotating zoom ring.

This lens has mechanical correction system of aperture diameter to prevent f-number variation by zooming.

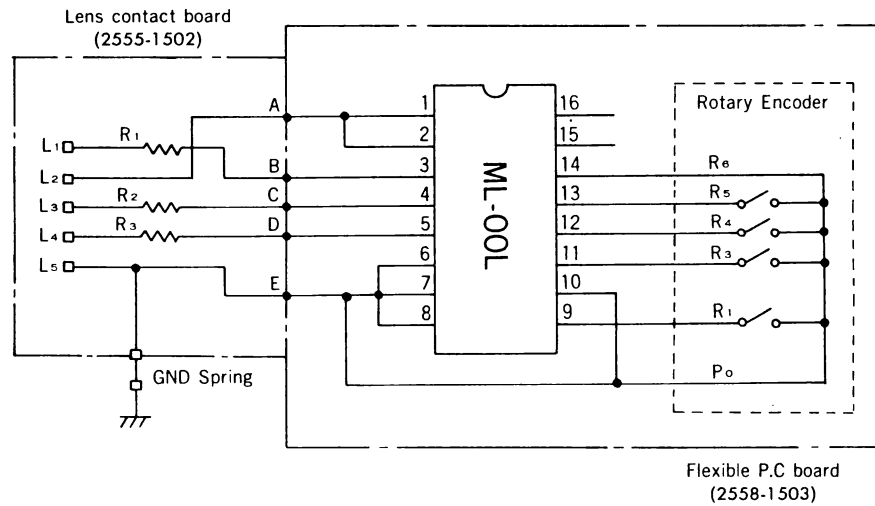
When focusing, 1st lens group (focusing lens group) is moved by rotating AF coupler or focusing ring.

Flare cutter is applied to this lens to decrease flare in TELE-MIDDLE side.



⇨ Moved by rotating focusing ring $D = 0.35\text{mm}$

■ Wiring schematic diagram and Printed wiring diagram



L1-5 : Lens signal contact
R1-3 : Printed resistor

ML-00L : ROM-IC
A-E : Soldering point
P0-6 : Rotary encoder pattern switch
(ON/OFF by zooming)

